Genoa National Fish Hatchery News and Notes

May 2016

About Genoa NFH

Genoa NFH was established over 80 years ago by the Upper Mississippi River Fish and Wildlife Act. The mission of the hatchery has changed from providing sport fish for area waters to a conservation hatchery concerned with the recovery of endangered aquatic species.

The hatchery is open for tours during business hours. For large groups, please call for an appointment. You can reach the hatchery at 608-689-2605 from 7:30 am to 3:30 pm. You can also find us online at: fws.gov/midwest/genoa

And on Facebook at: facebook.com/GenoaNFH

Genoa Field Season and Outdoor Education hit its Peak in May

May is affectionately and politely known as Dante's Inferno month at the Genoa hatchery, with spring stocking, egg collections, freshwater mussel restoration activities and outdoor education events peaking into a perfect storm of biology and education. In the month of May, over 20 million walleye eggs were collected, over 2 million juvenile mussels produced, 50,000 yearling 10-11 inch rainbow trout and coaster brook trout were distributed, 2 fishing events for families and veterans were hosted and 15 outreach events with 3 outdoor classrooms were hosted. Over 1,000 schoolchildren and their parents and teachers were reached with an outdoors and conservation message for the month. It's no wonder the staff is tired come June! As the old saying goes, "There is no rest for the wicked" however, as spring lake sturgeon egg collection and larval rearing programs also gain steam in May. There are currently 3 strains of lake sturgeon totaling over 125,000 fry on hand to take care of, with another strain of St. Lawrence River strain set to arrive in early June. All these activities could not happen without a dedicated staff, a cadre of great volunteers and an active and participating Friends Group. Then as summer approaches, we begin to turn our thoughts and activities to a more grounded approach. We are tied to the physical plant of the station with lake sturgeon culture, pond management and larval freshwater mussel culture chores to keep us occupied. Then if all goes well, fall stocking season will once again be a flurry of activity as the circle completes itself once again. Many thanks to the our Washington Office and Regional Office staffs and the many other people that support us while we get to do the fun work of boots on the ground conservation. By Doug Aloisi

Genoa crew spawning ripe female walleye

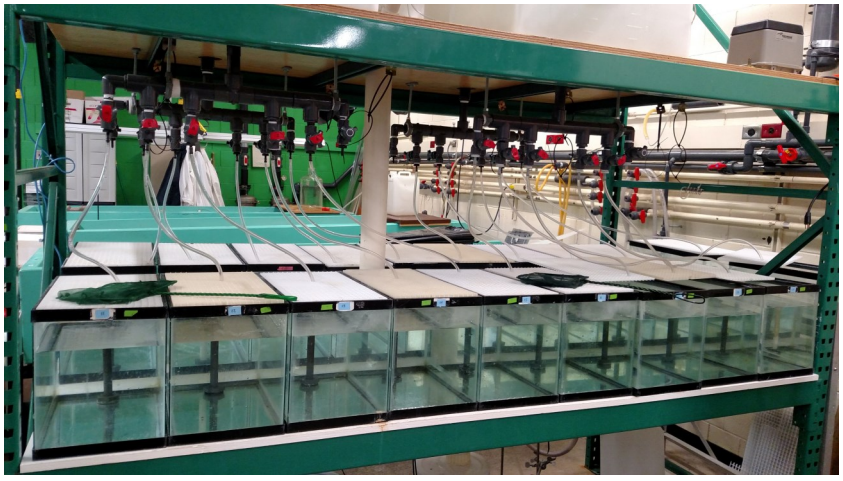
A young angler enjoys her catch

Taking Another Look at the Spectaclecase

In May a joint project between Genoa NFH and the USGS Upper Midwest Environmental Science Center (UMESC) was undertaken to determine the larval host for the Federally Endangered spectaclecase. The spectaclecase is a freshwater mussel that occurs in the Mississippi and St. Croix Rivers with a few additional populations in the Ohio and Tennessee River systems. Several attempts have been made to determine the host of the spectaclecase with no success. Some bizarre potential hosts have been tested including crayfish and aquatic insects in addition to standard host fish. The new project at UMESC is taking a targeted approach by comparing host fish presence for three spectaclecase populations (St. Croix, Meramac and Clinch rivers) and focusing on species that occur in all three systems. After focusing the list we set to shopping for the necessary fish. Between Genoa NFH, UMESC fish culture and a shocking trip in Pool 8 of the Mississippi enough fish were secured to fill all available tanks for the first round of host tests. A total of eighteen species were inoculated with mussels in the first round of host tests. Over the next month we'll be up at UMESC every other day to count any live or dead mussel larvae that has fallen from the fish. The data will help us determine the quality of host fish if we are able to identify more than one host for the spectaclecase. Another interesting facet of this project is that we are attempting to transform the spectaclecase larvae *in vitro,* which means in a petri dish using fish blood and a combination of drugs to keep bacteria and fungus from killing the larvae. In initial results are promising, but we'll know more in the month ahead. If we are successful, the host information that we learn can be utilized to implement restoration activities for this endangered mussel that currently waits for intensive restoration action.

By Nathan Eckert

Fish for one of the spectaclecase host trials during inoculation.



The aquarium array used for the host study.

Genoa National Fish Hatchery's mission is to recover, restore, maintain and enhance fish and aquatic resources on a basin-wide and national level by producing over 35 aquatic species of varying life stages, participating in active conservation efforts with our partners, and becoming a positive force in the community by educating future generations on the benefits of conservation stewardship

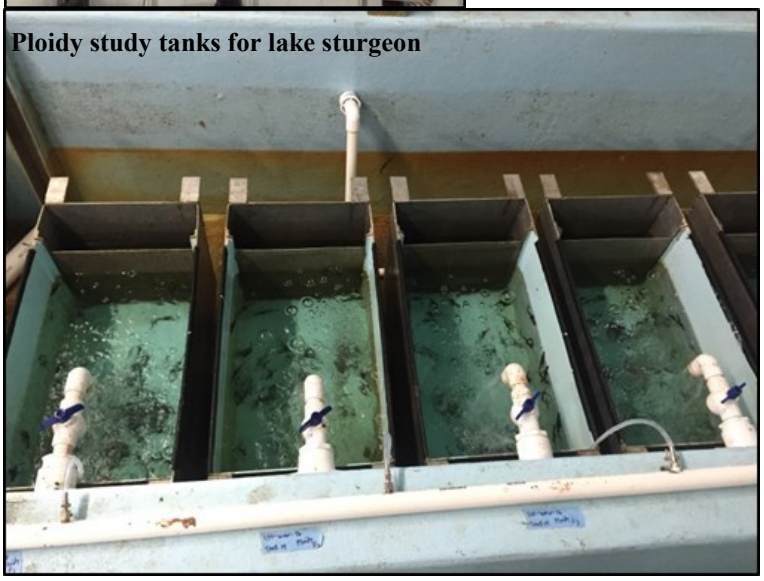
Sturgeon Season Underway

As staff members finish stocking rainbow and coaster brook trout and wrap up walleye operations on the Mississippi River the end of April, May kicks off with the collection of lake sturgeon eggs. This year Genoa National Fish Hatchery staff collected eggs from the Wolf, Wisconsin, Rainy and St. Lawrence Rivers. Throughout the summer sturgeon are fed a diet of brine shrimp, bloodworms and krill. After a summer of intensive culture juvenile sturgeon are lengths of 6-8 inches. Prior to release all sturgeon are coded wire tagged to track population trends in the future. Currently the sturgeon building is home to approximately one hundred thousand lake sturgeon ranging in sizes from 1-4 inches. Newly constructed larval and juvenile rearing tanks have allowed biologists to maximize feed conversions and propagate healthier and larger fish for fall stocking. Genoa biologists are continuing research evaluating growth rates of juvenile lake sturgeon at different water temperatures. Staff members Zach Kumlin and Jeff Lockington have been installing new plumbing and constructing a control unit with a mixing valve to control water temperatures. With this system in place biologists will be determining an optimal temperature range for growth of juvenile lake sturgeon. Identifying the optimal temperature for growth will allow hatchery staff to grow large healthy fish for stocking in the fall while also minimizing feed costs. Furthermore, a new research project is underway investigating spontaneous autopolyploidy in cultured lake sturgeon. Ploidy refers to the number of sets of chromosomes in a cell, or in the cells of an organism. USFWS biologists have collected blood samples from adult sturgeon for ploidy analysis and are currently rearing the offspring onsite for later analysis. It may be important to look at the adult sets of chromosomes because the mating of individuals with different numbers of chromosomes could lead to offspring with an odd number of chromosomes, possibly resulting in fish with reduced fertility. As a restoration hatchery this could greatly affect the stocked progeny. Techniques such as flow cytometry, which directly measures DNA content of a cell and particle analysis, will be used to evaluate incidences of spontaneous autopolyploid in cultured lake sturgeon. By: Orey Eckes

2016 Lake Sturgeon from the Wisconsin River

Lake Sturgeon building with newly added rearing space

Mixing valve and control unit



Ploidy study tanks for lake sturgeon

Double Dipping Out East

This spring Genoa National Fish Hatchery accomplished another dual purpose trip out East to support fisheries conservation. The first portion of the trip focused on delivering lake trout to Berkshire National Fish Hatchery to support the Fish and Wildlife Service's efforts to restore lake trout populations in the Lower Great Lakes. This lot of fish was raised at Genoa NFH for approximately 18 months and cleared 3 fish health examinations before being delivered to Berkshire NFH, Iron River NFH, and Sullivan's Creek NFH. These trout will serve as a broodstock population to provide eggs for years to come to support restocking efforts in the Great Lakes. The trip to Berkshire NFH was planned at the same time as St. Lawrence River lake sturgeon spawning. This allowed staff of Genoa NFH to essentially double dip on the trip. At the same time that we were toting lake trout on their 20 hour 1000+ mile trip, the lake sturgeon spawning tote and 5 carboys of hatchery elixir, otherwise known as Genoa well water were toted to upstate New York to use in the sturgeon egg taking process. This water is used throughout the process in order to not risk transporting infectious diseases to Genoa through the transport of river water. Lake sturgeon eggs were collected on the St. Lawrence River in upstate New York in a partnership with the USFWS, New York Department of Environmental Conservation, and U.S. Geological Survey office at Cortland, NY as part of lake sturgeon restoration efforts on the St. Lawrence River. Over 40,000 eggs were taken along the shore of the river and following disinfection they were boxed up and prepared for the long drive home. In the fall the fish will be stocked out at fingerling size (approx. 6-7 inches) in upper New York State. By Aaron Von Eschen

USFWS and Partners Spawning Sturgeon

Upcoming calendar of events

July 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 YCC Winona District Tour	**2**
3	**4** Independence Day!!	**5**	**6**	**7** Norseland Nursing Home Tour	**8**	**9**
10	**11**	**12**	**13** Westby Day Care Tour	**14** Catheral School Tour Hochuck Youth & Learning Center Tour	**15**	**16**
17	**18**	**19**	**20**	**21** YMCA Day Camp Tour	**22**	**23**
24/31	**25**	**26**	**27**	**28**	**29**	**30**